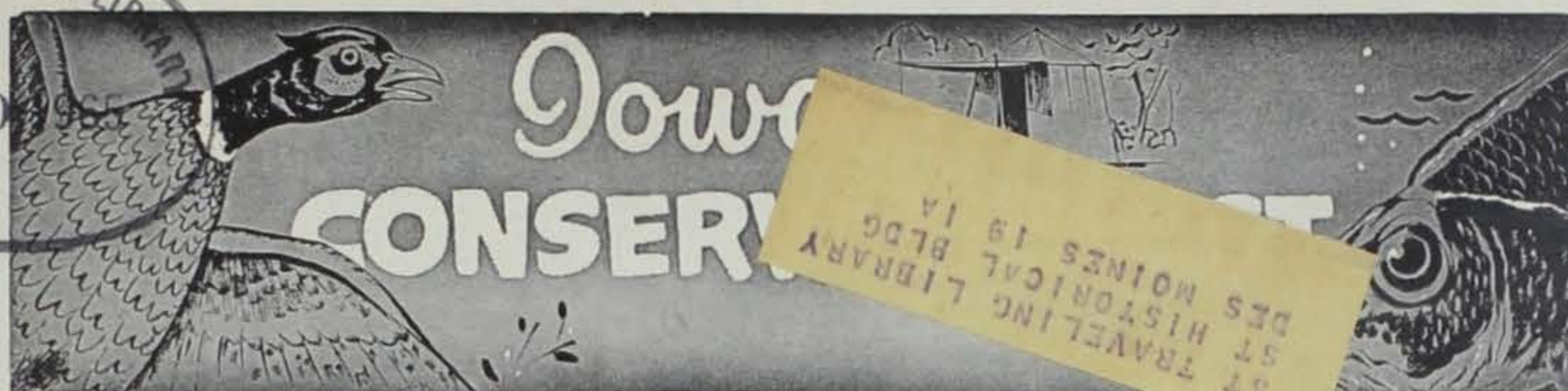


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MAY 10 1965



Volume 24

May, 1965

Number 5

A Camping Guide To The LEWIS & CLARK TRAIL

Jack Higgins

In 1804 the Lewis and Clark Expedition of Discovery brought the American flag and a promise of eternal protection to the vast lands of the Louisiana purchase. For 161 years their route has offered challenge and inspiration to thousands of travelers; and the best way to experience the real flavor of the trail is still a leisurely paced camping tour along the modern path of the "Big Muddy."

The Lewis and Clark Expedition can't claim the distinction of being the first white party to ascend the Iowa portion of the Missouri. White traders and trappers, mostly French and British, had already penetrated as far as the Mandan Indian camps in North Dakota. None had bothered, however, to record their impressions of the land, its inhabitants, or its flora and fauna. The leaders of the Expeditionary force did. The modern camper will find a journal of his Lewis and Clark trip as valuable as a camera.

Waubonsie's Weird Hills

The best place to start your Lewis and Clark journal is at beautiful Waubonsie State Park. Covering 1,128 acres of loess hill land, Waubonsie is in Fremont County, just 173 miles southwest of Des Moines. The journals kept by the men of the expedition often comment on the road plains between the eastern and western bluffs. From the many splendid lookouts and trails in the park, one can easily see what they saw when they passed by the point in mid-July of 1804.

Named for Chief Waubonsie of the Pottawattamie tribe, the park reserves many unique attractions within its boundaries. The camping area is on the top of a high bluff in the center of the park. Cool breezes seldom fail to fan the area. And since it is completely modern, even the most finicky campers will find it easy to call Waubonsie "home" during their stay.

The avid angler will not be able to wet a line in the park proper, as Waubonsie is one of the few parks that contain no streams or impoundments. Its chief attraction is the weird beauty of the hills, the views along its famous trails, and the sight of such unusual plant life asacca plants and paw paw trees. If anyone in the party just "has" fish, there are many good farm ponds in the immediate area where, after asking permission, one may catch bluegill, bass or crappie.

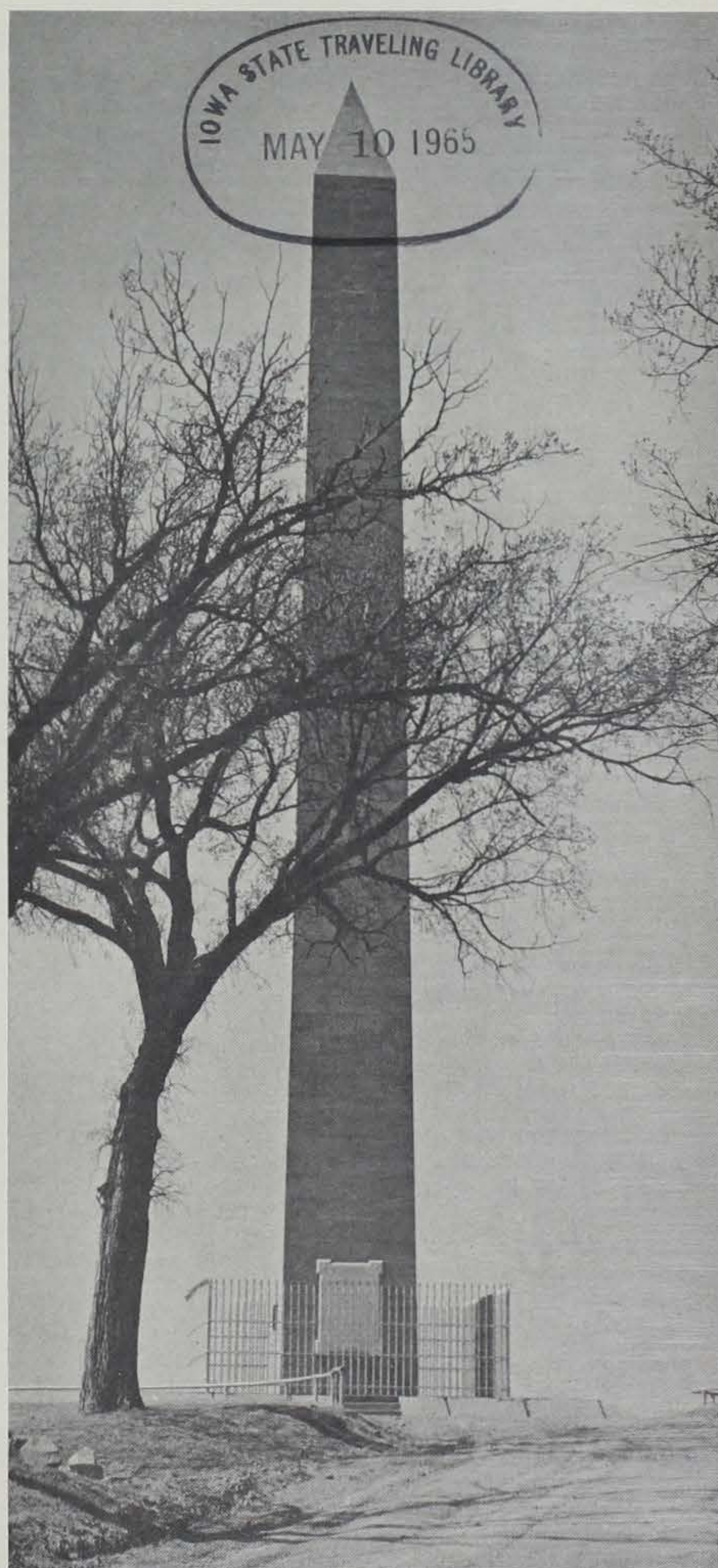
Plan an early supper for one evening of your stay so that your entire party can have time to stroll out the one mile path to Sunset Ridge. This fantastic wind formed bluff offers a panoramic view that some consider to be equal to any in the world. Every sunset here is unique, and in the deepening twilight it's easy to imagine that the ghosts of the Lewis and Clark party are still trudging their way up a forgotten channel of the river that meanders some 300 feet below. If you're lucky, you'll be able to trace the arc light path of a hard working tow boat on its way up the river.

The Route North

The route that the Lewis and Clark Trail will follow in Iowa is yet to be marked, so you can use your imagination in planning your northward trek after your stay at Waubonsie. For a look at the richness of the valley floor, you can travel the blacktop road that runs north on Highway 2 through Percival, McPaul, Bartlett and Pacific Junction. Here you can turn right on Highway 34 and pick up route 275 for a scenic drive through the bluffs for the balance of the drive to Council Bluffs.

If you schedule your drive properly, you'll have time to stop at Lake Anawa. This State Park on the south edge of Council Bluffs doesn't have camping facilities, but the grounds around the lake are ideal for a noon picnic stop. You'll enjoy the sight of pelicans and diving gulls; and the fisherman in your party will want to take time to try his luck at this ox-bow lake.

(Continued on page 39)



Max Schnepf.

The Sergeant Floyd Monument stands watch over the Missouri River valley.

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CIRCULATION THIS ISSUE 52,000

COMMISSION MINUTES

April 6, 1965
Des Moines, Iowa

FISH AND GAME

Approval was given to exercise an option for purchase of 141 acres of land at a cost of \$300 per acre from Siem and Oakes as an addition to the Princeton area in Scott County.

Approval was given to exercise an option for the purchase of 24 acres at a cost of \$250 per acre from Kimberly as an addition to the Hendrickson Marsh in Story County.

Approval was given to exercise an option for land purchases from Christensen, Jary and Gloyer in the Badger Lake Area in Monona County, consisting of 120 acres of land at \$100 per acre.

Opening dates for various hunting seasons were determined.

Approval was given to a design for sanitary facilities to be erected on the New Albin Access Area in Allamakee County.

The Commission met with a delegation from Cedar Rapids and discussed duck hunting on the Coralville Reservoir.

Approval was given for the construction of fishing docks for use by senior citizens.

Authorization was given for the Fisheries Section to construct a boat pass and fish trap between Minnewashta and Lower Gar lakes.

The Chief of Fish and Game gave a preliminary report on estimated pheasant loss in the recent storms.

LANDS AND WATERS

Approval was given to accept a bid for a service building to be built at Lake Anita in Cass County by Christopherson and Christensen of Kimballton at a total cost of \$11,976.

Approval was given for the renewal of a trail ride concession at the Yellow River Forest in Allamakee County for three years.

Approval was given to dismantle three old cabins at the Palisades-Kepler State Park.

A delegation from Pottawattamie County met with the Commission

sion to discuss maintenance responsibility of the Lake Manawa Road.

Approval was given for a statement to the Legislature concerning possible improvement work to be done on the Spring Lake Area, following a meeting with a delegation on this matter.

Approval was given to a motion concerning the promotion of a lake project in Webster County with certain reservations and stipulations.

COUNTY CONSERVATION BOARD PROJECTS

Black Hawk County received approval for the acquisition of 9 acres of land at a total cost of \$900 as an addition to the Popp Access Area to be used primarily for road construction purposes to provide access to the west side of Black Hawk Creek.

Black Hawk County received approval for the acquisition of 15 acres of land at a total cost of \$750 as an addition to the Stempke Area as part of an over-all plan to acquire the land adjacent to the entire eight mile stretch to the Wapsipinicon River in that county.

Bremer County received approval for the acquisition under a sponsoring agreement of one acre of land from the Iowa State Highway Commission located on Highway 63 for the purpose of creating a safety rest area.

Calhoun County received approval for the acquisition of 16 acres of land by a sponsoring agreement with the Iowa State Highway Commission on State Highway 17 south of Rockwell City for the purpose of establishing a highway safety rest area.

Calhoun County received approval for the acquisition of 1½ acres of land by a sponsoring agreement with the Iowa State Highway Commission located on highway 20 east of Rockwell City for the purpose of establishing a highway safety rest area.

Crawford County received approval for the acquisition of 4.6 acres of land at a total cost of \$500 as an addition to their Nelson Park for the improvement of their main entrance.

Des Moines County received approval for the acquisition of 8½ acres of land under a sponsoring agreement with the Iowa State Highway Commission for the establishment of a safety rest area on Highway 61, one mile south of the city of Burlington.

Floyd County received approval for the acquisition of a lot plus two existing buildings in the city of Floyd at a total cost of \$5,500 for the purpose of establishing a central headquarters and service unit.

Howard County received approval for the acquisition of 10.14 acres of land at a total cost of \$1,883.00 as an addition to Hendricks Park, to be used for improving the camp grounds and main entrance.

LEAVE WILDLIFE BABIES ALONE

Ron Schara

On an autumn day two years ago, a deer was released into a cent Iowa timber. Ironically, timber was a new and different surround to this animal. It had been kept as a family pet since shortly after birth in the wild.

The day it was released, the six-point buck crossed trails with the squirrel hunters. The hunters, amazed that the animal showed no fear of humans approached the buck. When the deer didn't move, one of the hunters continued walking until he was within arm's length of deer. Suddenly, the animal charged. The hunter reacted by grabbing both antlers as the animal knocked him to the ground. Fearing 150-pound buck's slashing hooves, the downed hunter cried out, "Don't let him kick me!" His hunting partner, momentarily stunned by surprise attack, came running and sunk a hatchet into the buck's neck. The deer jumped up and ran off. Other than a few cuts and bruises and a bad case of jitters, both hunters were okay. They consider themselves lucky, however; the buck's attack could have been fatal.

Incidents, such as this, are rare; but the fact that young wildlife is often "adopted" by well-meaning people is not. Much has already been said regarding reasons against adopting wildlife babies and needs repeating. One of the reasons was well exemplified in the above story. However, the best argument against adopting wildlife young, is often overlooked. This is a moral reason. Or, what is our responsibility toward wild creatures?

The best way to illustrate our responsibility, perhaps, is to illustrate what happens when this responsibility is ignored. Most people do not pick up young animals to destroy or hurt them, but, in essence, this is what they unknowingly do.

A caged wild animal loses its greatest attribute, that of being wild. For example, compare a caged fox with one in the wild. A caged fox paces unceasingly, back and forth, back and forth. It isn't alone nor does it have to be. It isn't cunning; and it isn't sly, nor does it have to be. A penned fox is lacking almost all of the attributes that make the fox the gallant animal it is. Herein, perhaps, lies our responsibility to allow all wild animals to keep the only real valuable assets they have. Ironically, these assets are those we admire most even though they often seem bent on removing them.

It is necessary for the benefit of many people to cage wild animals. These zoo animals are cared for by trained people who know the animals' needs; but in most instances, this knowledge is not shared by the general public. Animals in a zoo or wildlife exhibit often appear ideal pets, but don't be mistaken. A caged animal is only a replica of what it by no means, can display for you the magnificent grandeur and admirable qualities it possesses in the wild. Leave them in the wild where they belong there.

Monona County received approval to acquire 5.22 acres of land at a total cost of \$1,000.00, located south of and adjacent to the Cleg-horn Drainage Ditch for an access to Missouri River and picnic area.

Tama County received approval for a trade for 147.4 acres of land and a purchase of an additional 6.3 acres of land at a total cost of \$1,329.00 for use in the construction of an artificial lake park.

Calhoun County received approval for a development plan for a safety rest area on Highway 17, and a safety rest area on Highway 20.

Calhoun County received approval for a development plan for the Kelly Access Area for picnicking and fishing access.

Des Moines County received approval for a development plan for the Augusta Skunk River Access Area to be used for picnicking, camping and fishing and boating access to the Skunk River.

Greene County received approval for a development plan for the Henderson Park for use as a picnic area access to the Raccoon River, boat launching, nature study and wildlife habitat.

Greene County received approval for Hyde Park development

plan to be used for picnicking, boat launching, winter sports, wildlife and nature study area.

Greene County received approval for a development plan for Squirrel Hollow Park providing various improvements to the facilities already established in the park area.

Monona County received approval for a development plan for wildlife planting adjacent to Interstate Highway 29 near Whitin

GENERAL

Informational items included discussion on the possible exchange of walleye fry for turkeys with various states; resignation of two conservation officers; planned public meeting concerning Shimek Forest Area; and a request for zoning by the city of Anita for a dump near Lake Anita.

Travel was approved to the Midwest Workshop on Litter Prevention at Omaha, Nebraska; and the Annual Meeting of Illinois Division of Izaak Walton League at Springfield, Illinois.

Never roll up a tent when it is wet. Otherwise, it will support mildew when stored.

'Baby Sitting' At the Wildlife Exhibit

Ron Schara

One day, at the Wildlife Research and Exhibit Station at Ledges State Park near Boone, an animal resident, a beaver, became sick and died. It had been in captivity less than a month. Before its death, the beaver was active, had eaten heartily and appeared in good health. Why did the animal die?

This wasn't a new question for Ward Garrett. In his experience as supervisor of the Research and Exhibit Station, many animals have mysteriously and suddenly died. "Luckily, the reasons for most of the unexpected deaths have been discovered," Ward recalled. "If the beaver's death was a typical 'case,' it meant that another 'food mystery' had to be solved before the animal could be exhibited again."

Since the Exhibit opened, in 1961, the caretakers have been plagued with the problem of feeding the proper foods to the captive animals. The diet troubles came from seemingly nowhere. Some animals appear contented on their natural diet, but then react. The question arises: Why can they eat their natural food in the wild, but not in captivity? Other animals refuse to eat their natural diet when in captivity. In this case, a substitute diet must be found. Still others will eagerly eat substitute diet only to become ill or die because, unknowingly, the animals' new food lacked something it needed.

Unfortunately, there are a few means by which these food troubles can be found before they begin. Very little has been written on the care and feeding of captive wild animals that would apply to all areas of the United States. A species from two different parts of the country might well require two totally different types of food! Consequently, most of the Exhibit's food difficulties must be solved by trial and error.



Jack Kirstein.

This young white-tail deer has graduated from a milk formula to grain and is no longer a problem to feed.

The solution to the beaver problem, however, did not have to be solved by experimentation. By exchanging problems with other conservation departments, Iowa learned that beaver could survive in captivity if fed raw carrots and potatoes, instead of a more natural diet of tender twigs and plants. Why the beaver thrived on these vegetables was not known for sure. It was suggested that, because the captive beaver could not exercise sufficiently, its natural food was too rich and the animal's body cells "burned up" causing the huge rodent to deteriorate. This was only a guess, the real reason may still lie in nature's book of secrets.

Caring For The Young

During the spring of the year, the Exhibit is besieged with young mammals that are brought by people who had "adopted" them. The young animals are not difficult to feed; milk is their only requirement. But, the type of milk and the conditions under which it is given was found to be critical. The young creatures are fed whole, condensed milk. Plain, whole milk will not do nor can the condensed milk be diluted. Often, weak or very young mammals are given a milk formula such like a family doctor might recommend. Each animal is fed with a sterilized baby bottle. Sterilizing the bottles after each feeding is as most important too, otherwise, the young animal develops scours.

The meticulous care needed by the young animals impresses upon one the fact that it is miraculous how they survive so well in the wild.

Finding the proper food for young mammals was a "minor" problem compared to two "cases" involving sick otters and a paralyzed eagle. Both species were doing fine on their new diets when suddenly they reacted. Ward explained the otter crisis. "When we first bought the otters, we found they couldn't be fed their natural diet of fish. Wisconsin had fed fish to their captive otters and they suddenly died. Therefore, we had to find a new food formula. The otters were given daily a formula of: one pound of U. S. No. 1 groundbeef with no fat or gristle, a portion of prepared commercial feed, raw eggs and a few drops of cod liver and wheat germ oil." Ward laughed, "You know," he said, "that lean groundbeef is better than you'll find in most stores."

In spite of the high protein diet each otter received, tragedy struck. The otters developed a mange-like condition, open sores appeared and became infected. Three otters died. "At the time, it seemed ridiculous to think food was the cause; but, Keith Larson, deer biologist, suggested the otter be fed boiled eggs instead of raw eggs," Ward said. "It wasn't long after that the condition of the other otters improved." The explanation given was there is a protein in raw eggs that destroys a B vitamin much-needed by otters. By boiling the eggs, this protein is destroyed.

"The lack of vitamins was also the cause of some eagle trouble we had too," Ward continued. "One day, I noticed one of the golden eagles had fallen from its perch to the floor and was completely paralyzed. It was still alive so we rushed it to the Animal Diagnostic Laboratory in Ames. The 'Vet' checked the bird's condition, reached for a hypodermic needle and gave the bird a shot of Vitamin B₁. It wasn't long and the bird was back on its feet," Ward chuckled. "They suggested we feed the raptorial birds (hawks, owls, vultures and eagles) beef hearts instead of other meat scraps. Evidently, the beef hearts contained the necessary vitamins the birds needed."

"As confusing as it sounds, there are quite a few animals that are relatively easy to care for," interjected Doyle Adams, Assistant Supervisor of the Exhibit. Waterfowl and most of the gallinaceous birds (pheasant, quail, partridge and turkey) are fed corn, commercial feed and green plants. We do have to watch how much corn the ducks eat though, otherwise, they'll get too fat . . . just like some people," he laughed.

Exhibit Escape Artists

"Our squirrels are also easy to care for," Ward said. "Almost every animal, both young and adult, is under extreme stress when first taken into captivity, but squirrels adjust in about a week, which is shorter than most animals take. Some animals never adjust. Cottontail rabbits, once captured, go into shock and never adapt to a caged life." "Squirrels give us some headaches though," Ward continued, "they are simply artists at escaping. One of the black (melanistic) squirrels apparently escapes whenever he feels like it. The funny thing is, he'll never try to escape while someone's watching! But when it got cold this fall, that ol' 'winter soldier' came back and stayed. I guess he realized where the food came from."

Animals that everyone hopes do not escape are the crowd-pleasing wolves. "The she-wolf is full-blooded and came from Russia," Ward explained. "She was sent to an Iowa school teacher after he requested it from former Premier Khrushchev when he visited Iowa. The teacher later gave her and one of her pups to the exhibit. The pup is half German shepherd." "That she-wolf would kill you if she had the chance," Ward said clenching his ever-present pipe. "We keep them to show people the difference between a wolf and a coyote (sometimes called a prairie wolf). So many people think they shoot wolves when actually they are coyotes. We've exhibited them side by side so people can see the tremendous size difference for themselves."

Trying to maintain at least a representative of every game animal and bird in Iowa's wildlife heritage is not an easy task. Very few captive wild animals reproduce in captivity. Consequently, wild specimens must be found as replacements. Predatory birds are one of the hardest to replace. "These birds have never raised any young in captivity, as far as we know," Ward said. "They're as proud and gallant in captivity as they are in the wild. They just never give up."

The Wildlife Exhibit has begun its fifth season. When it closes again in October, over 350,000 visitors will have watched, pointed fingers, stared and admired the variety of wildlife presented. But, as simple as these creatures appear, each withholds a number of nature's unsolved secrets. Secrets that shall never cease to be a cause of mystery, and bewilderment, especially to those who must solve them.

Avoid wetting your tent canvas with insect sprays. Some insecticides destroy the water repellency.

It is NOT true that if the skin can be pulled from the cap of a mushroom, it is safe to eat.

It is NOT true that if a mushroom is boiled with a silver spoon and the spoon doesn't turn black, the mushroom is safe to eat.

It is NOT true that if salt changes color when rubbed on a mushroom, the mushroom is safe to eat.

Remember the good old days and

TRUE FISH SMOKING

Story and Photos by Max Schnepf

At the turn of this century it was a rare farm indeed that did not have a smoke house. Only within the last two decades has the use of this traditional structure given way to commercial curing methods.

Tradition has a way of hanging on, however. Makeshift smoking devices are reappearing here and there in backyards in cities and on farms. Perhaps they are the result of recollections of youthful carp-searing escapades and the mouthwatering aroma of a hickory smudge curing the catch.

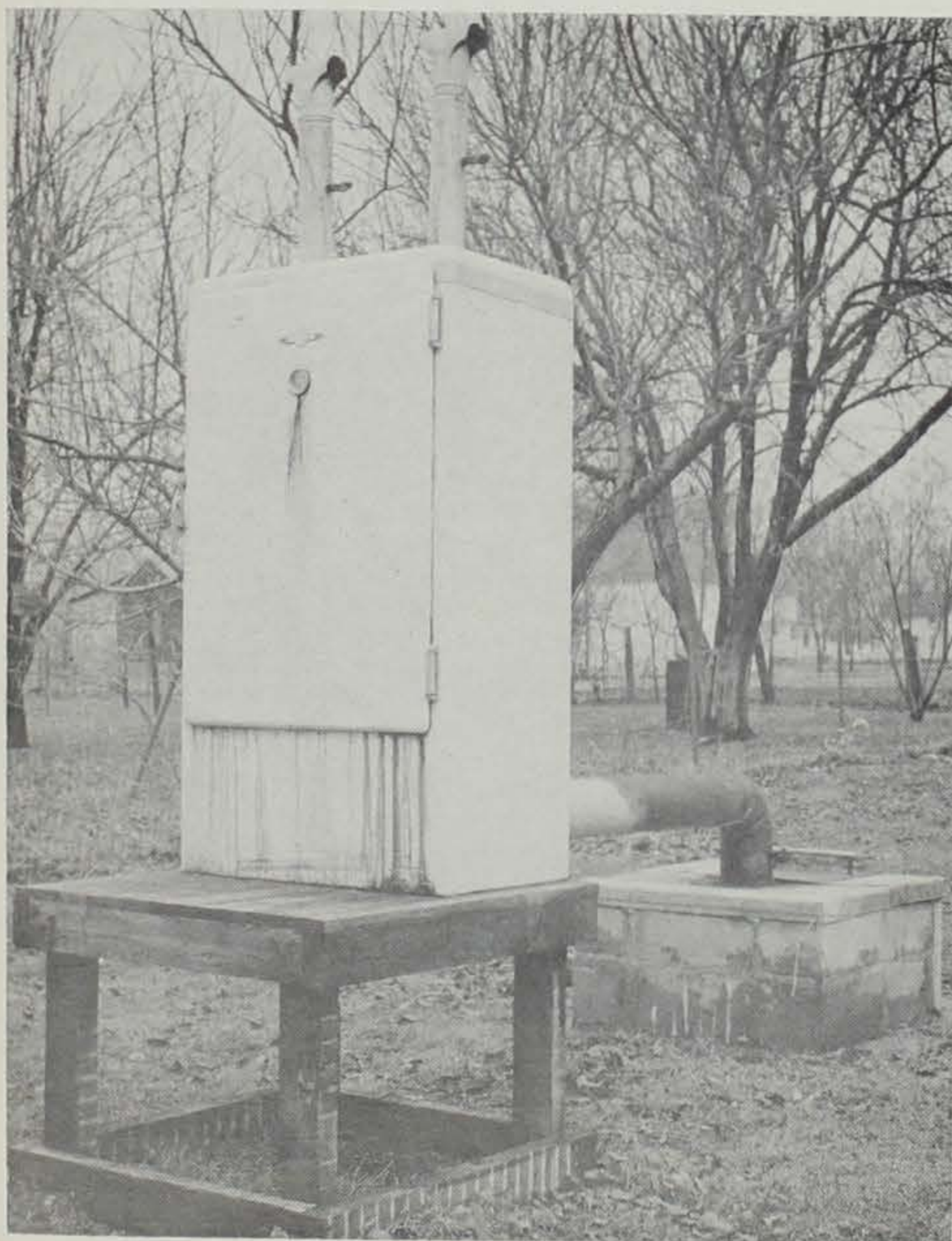
In Daryl Dixon's backyard in LaPorte City, there is an all-weather fish smoker—a true smoker—that Dixon constructed for less than \$15. The LaPorte City man's project, undertaken as a hobby, began with a tour of the local junk yard one day last summer. The tour ended with his purchase of an old refrigerator for one dollar. This obsolete appliance together with the following materials and a little knowledge of fish smoking gathered at Waterloo's Public Library are the ingredients in his backyard fish smoker.

MATERIALS LIST

Concrete block (25)	Mortar and sand
Tin (Enough for firepot cover, smoke deflector and to replace any plastic lining in the refrigerator.)	$\frac{3}{4}$ inch wood dowel
No. 9 wire (10 feet)	6 inch stovepipe (9 feet)
$\frac{3}{4}$ inch sheet metal screws	6 inch damper
6 inch stovepipe elbows (2)	3 inch stovepipe (3 feet)
Refrigerator	Rain cap
3 inch damper	Wire brads
Asbestos wicking	Padlock
Heat indicator	Adjustable shelving strips
Hasp	Shelving (1 x 2 welded wire)
Shelving brackets	$\frac{1}{4}$ inch wire screen (8 inches square)
Shelf supports (1 inch metal tubing)	$\frac{3}{4}$ inch plywood/1 inch sheeting and 2/4s
$\frac{1}{4}$ x $1\frac{1}{2}$ stove bolts (4)	

THE FIREPOT

The smoker's firepot, sixteen inches high and approximately three feet square, is constructed of concrete blocks. However, cement blocks do not stand up well when exposed to heat, so fire brick are preferred. Half of the firepot's top is permanently covered with a tin cap. A six-inch hole, cut in this piece before it was placed on the firepot, accepts the stovepipe which carries smoke to the smoker. A tin lid hinged to the permanent tin cap covers the remainder of the firepot and permits



A smoker like this one can occupy any small corner of a backyard.



Clean the fish; stoke the fire; soon the aroma of smoked fish will fill the air.

access to the firepot's interior. A wood handle on the hinged lid prevents burned fingers.

The omission of one block in the front of the firepot permits installation of an adjustable air vent which regulates the amount of air reaching the fire. The vent is easily constructed by cutting a hole in a piece of tin, then placing an adjustable flap over it. This tin covering an air vent, along with the permanent portion of the firepot's top are held in place by a piece of number nine wire stretched around the firepot.

THE SMOKE CONDUIT

Smoke is carried from the firepot to the smoking chamber in a fifteen foot piece of six inch stovepipe. Two six inch elbows are necessary to complete the turns incurred in the connection of the two units. A one foot section of stovepipe between the firepot and first elbow has a six inch damper to regulate heat and smoke. In case more heat and smoke are desired than can be obtained with the foregoing setup, a shorter length of stovepipe can be inserted between the two elbows. This is the reason Dixon has placed a portable wood skid under the refrigerator.

THE SMOKING CHAMBER

Using a half inch drill and circular hole cutting attachment, Dixon cut through three holes in the refrigerator—a six inch hole in the floor to accept the smoke conduit from the firepot and two three inch holes in the ceiling for air vents. (One ceiling vent is sufficient.) Each ceiling vent has a three inch damper and rain cap.

All plastic lining on the interior of the old appliance was removed and replaced with tin or a similar sheet metal. Rubber stripping around the refrigerator door was replaced with asbestos wicking, fastened in place with wire brads set in drilled holes. Asbestos wicking can also be used to seal joints around the air vents and stovepipe connections.

Although Dixon inserted a heat gauge in the refrigerator's door, a simple heat indicator hung on one of the shelves inside the smoker will suffice. The refrigerator's door should also have a hasp and padlock so it can be locked when the smoker is not in use.

Shelves in the smoking chamber on which fish are laid during the smoking process can be constructed from a variety of materials and in a number of ways. Dixon inserted two adjustable shelving strips on each side of his smoker, then cut one inch metal tubing, notched on one end, for shelf supports. Although panfish can be smoked on number nine wire pins, the flesh of carp, buffalo and similar fish species will eventually fall off pins. These fish should be laid on wire racks. One inch by two inch welded wire makes excellent shelving. The shelves should be set in the smoker at a slight angle to permit the juices to run off the fish.

An eight-inch square piece of quarter-inch screen is placed over the smoke inlet on the floor of the smoking chamber. This screen filters

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FISH "COOK-OUT"

Jack Higgins

"Cook-out," a national craze that became the national pastime, has caused too many headaches and worries for mothers who have to keep hungry tribes pacified during extended camping trips. This is because the back yard cook-out is so strongly based on meat cookery, that when it comes time to take to the hinterlands on a camping trip, thought is given only to what kinds of meat should we eat; how much should we buy; and when we run out, what will we do?" The smart mother says to heck with it and buys enough slab or iced bacon to keep her families neat tooth" filled and at the same time supply her with enough drippings to use in frying foods, seasoning vegetables, or as a "secret" sauce ingredient for salads. This attitude not only simplifies cooking, but assures that when the question "What can we do now?" is raised, mom can say, "Catch me fish for dinner (or supper, or breakfast!)" While the off-spring is so occupied, mom can spend additional time communing with nature or even catching fish with the rest of the family. The only problem that remains is how to cook the catch. Here are several recipes which will establish the fish as the meat to eat during the camping trip. Try them and they'll become family favorites.

Charcoal Broiled Fish Steaks

2 pounds fish steaks
 1/2 cup butter or other fat, melted
 1/4 cup lemon juice
 2 teaspoons salt
 1/2 teaspoon Worcestershire sauce
 1/4 teaspoon white pepper
 Dash tabasco
 Paprika

Cut into serving-size portions. Combine remaining ingredients. Baste fish with sauce. Place fish in well-greased, hinged wire grills. Cook on a barbecue grill about four inches from moderately hot coals for eight minutes. Baste with remaining sauce. Turn and cook for seven to 10 minutes longer or until fish flakes easily when tested with a fork. Serves six.

Fish Fillets in Foil

2 pounds fish fillets
 2 green peppers, sliced
 2 onions, sliced
 1/4 cup butter or other fat, melted
 2 tablespoons lemon juice
 2 tablespoons salt
 1 teaspoon paprika
 Dash white pepper

Cut into serving-size portions. Cut six squares of heavy-duty aluminum foil, 12 inches each. Grease lightly. Place each portion of fish, side down, on one-half of each square of foil. Top with green pepper and onion, dividing evenly among portions. Combine remain-

ing ingredients. Pour sauce over fish, using approximately one tablespoon for each portion. Fold other half of foil over fish and seal edges by making double folds in the foil. Place packages of fish on a barbecue grill about five inches from moderately hot coals. Cook for 45 minutes or until fish flakes easily when tested with a fork. To serve, cut a big crisscross in the top of each package and fold the foil back. Serves six.

Fisherman's Delight

2 pounds pan-dressed yellow perch or other small fish
 2 tablespoons lemon juice
 2 teaspoons salt
 1/4 teaspoon pepper
 1 pound sliced bacon

Clean, wash, and dry fish. Brush inside of fish with lemon juice. Sprinkle with salt and pepper. Wrap each fish with a slice of bacon. Place fish in well-greased, hinged wire grills. Cook on a barbecue grill about five inches from moderately hot coals for 10 to 15 minutes or until bacon is crisp. Turn and cook for 10 minutes longer or until bacon is crisp and fish flakes easily when tested with a fork. Serves six.

Barbecued Fish Steaks

2 pounds fish steaks
 1/4 cup chopped onion
 2 tablespoons chopped green pepper
 1 clove garlic, finely chopped
 2 tablespoons butter or other fat, melted
 1 can (8 ounces) tomato sauce
 2 tablespoons lemon juice
 1 tablespoon sugar
 1 tablespoon Worcestershire sauce
 2 teaspoons salt
 1/4 teaspoon pepper

Cook onion, green pepper, and garlic in butter until tender. Add remaining ingredients and simmer for five minutes, stirring occasionally. Cool. Cut steaks into serving-size portions. Place fish in a single layer in a shallow baking pan. Pour sauce over fish and let stand for 30 minutes, turning once. Remove fish, reserving sauce for basting. Place fish in well-greased hinged wire grills. Cook on a barbecue grill about four inches from moderately hot coals for eight minutes. Baste with remaining sauce. Turn and cook for seven to 10 minutes longer or until fish flakes easily when tested with a fork. Serves six.

Pine Bark Stew

2 pounds fish fillets
 1/2 cup chopped bacon
 1 cup chopped onion
 2 cans (1 pound 13 ounces each) tomatoes
 2 cups diced potatoes
 1 cup catsup
 2 tablespoons Worcestershire sauce
 2 teaspoons salt
 1/2 teaspoon pepper

Skin fillets if necessary. Cut fillets into one-inch pieces. Fry bacon until lightly browned in a

(Continued on page 39)

YOU NEEDN'T BE A SNAKE CHARMER

This month, Iowa's outdoor recreation activity swings into high gear. State parks will be crowded with picnickers, campers and sightseers. Stream banks will be lined with fishermen. For the most part, these recreationalists will enjoy pleasant outings. A few, however, will encounter some unpleasanties—a run-in with a poisonous snake, for instance.

There are two types of poisonous snakes on the North American continent—pit vipers (rattlesnakes, copperheads, and cottonmouths) and coral snakes. Coral snakes and cottonmouths are restricted to the southeastern and southern regions of the United States and are of no concern to Iowans. Only rattlesnakes and copperheads are found in the state.

The most common and largest poisonous snake in Iowa is the timber rattler. Averaging three to five feet long, this snake inhabits the wooded stream valleys and limestone bluffs of eastern and southern counties. The timber rattler is usually light brown to gray with black or dark brown crossbands.

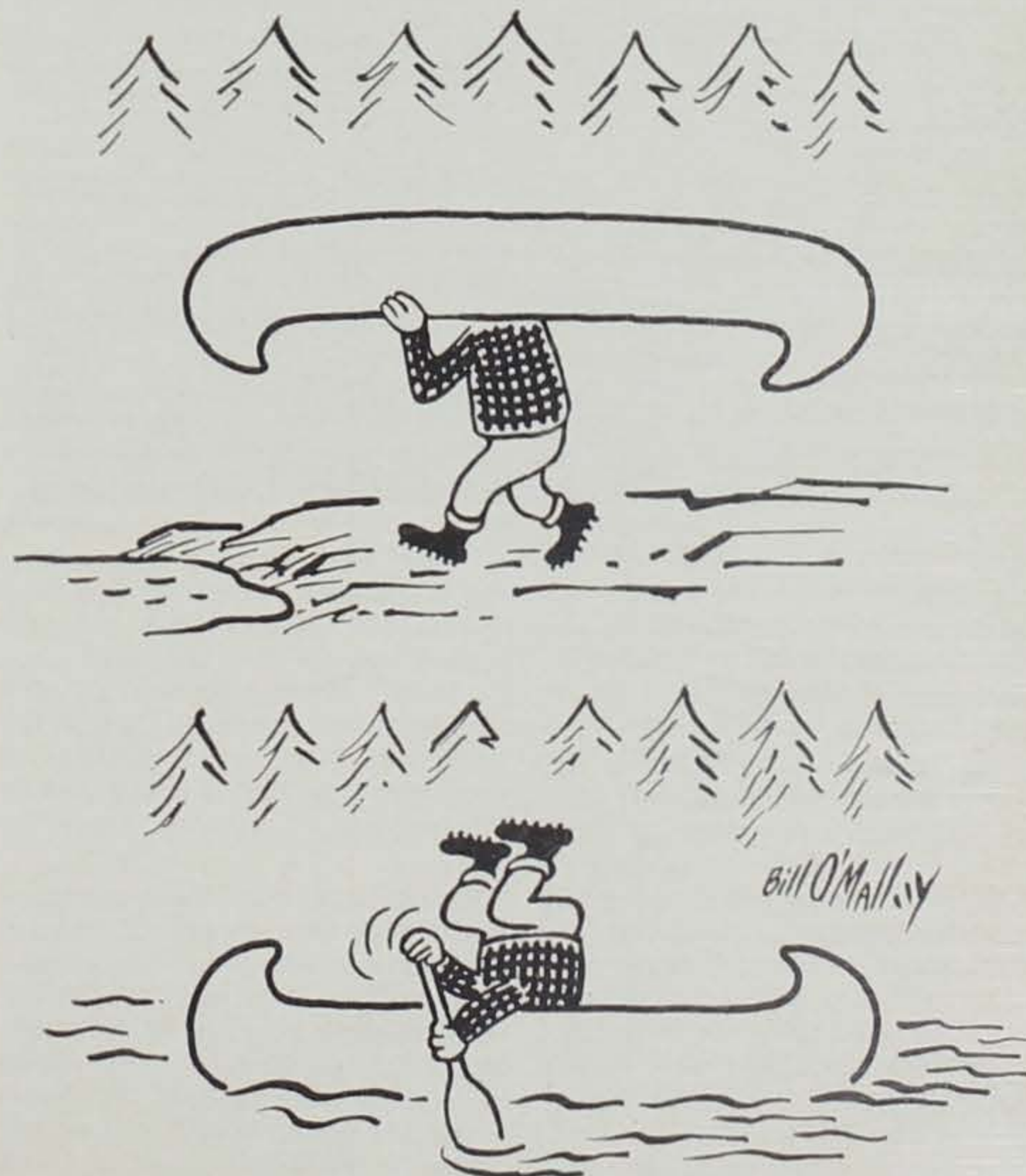
Almost as large but not nearly so common as the timber rattler is the prairie rattlesnake. This species is found in restricted areas in the western tier of counties. It is a snake of the grasslands, averages three to four feet in length and is greenish-gray or olive colored with dark brown blotches.

Iowa has two smaller species of rattlesnakes, the eastern and western massasauga. The eastern massasauga, averaging a foot and a half to two and a half feet long, is characterized by a row of black or dark brown spots down its back and three rows of smaller and lighter spots on each side. The eastern species is usually found in wet prairie areas and sloughs in eastern and south central Iowa. The smaller western massasauga is similarly marked but lighter in color and found only in boggy areas of the extreme southwestern corner of the state.

The fifth pit viper species, the copperhead, is not common in the Hawkeye State. It inhabits only the rocky, wooded hills of extreme southeastern Iowa. The copperhead's name is derived from its copper-colored head; it also has a distinct hour-glass pattern on its back. This snake usually grows to between two and three feet long.

The best advice for the recreationist is to try to avoid all snakes, if possible. The snakes themselves will try to avoid humans. They will strike usually only when they are surprised or cornered. By carefully observing the terrain ahead, the recreationist can guard against an accidental encounter.

Prevention is obviously the best cure for snake bite, but an inexpensive snakebite kit provides insurance. If you own a kit, know how to use it! Above all, don't panic; keep a victim quiet and on his back; and send for help.





An alcohol-filled tent heater.

PORTABLE HEAT

Story and photo by
Jack Kirstein

If you are one of the many campers who feel that a short three month camping season just doesn't give you enough time in the open, then you should know about the six to eight month camping season in Iowa.

You can effectively stretch the summer camping season by two to three months on each end by adding a portable tent heater to your equipment inventory. The early spring months of camping are really the best. During these months, there has been no mosquito hatch, the flies have yet to put in an appearance, and the campgrounds are usually only slightly used by campers. At this time, you can have the State Park system all to yourself. This also holds true in the fall, when lowering temperatures at night cause many campers to stay home.

The daytime temperatures are usually warm—to insure your comfort, perhaps a sweater or light jacket is all that is needed to be fully at ease. Your sleeping bag is usually sufficient to keep you warm while sleeping. It is only the early morning and late evening hours that are uncomfortable, and you can do something about that.

In general, there are three main types of tent or space heaters used by campers. These are, the alco-

hol-filled, catalytic, and infra-red heaters.

The alcohol types employ a wick-type burner with an actual but enclosed flame for safety. Most of them will burn with a high heat for two to thirty hours, and usually will not have to be refilled during the night. They are explosion resistant, and give off no carbon monoxide.

Although you must carry fuel for them in addition to the white gas or camping mixture for your stove and lantern, they give the most heat, ranging up to 5000 BTU.

The second type is the catalytic heater in which no flame is used, but the fuel is consumed by an oxidizing action on the burner head.

These are probably the safest, as far as fire is concerned as they will not explode, even if overturned. They are so safe that paper or clothing brought in contact with the burner itself will not ignite. It is actually possible to pour raw gasoline or other fuel on the hot burner without danger of fire.

Third, is the new infra-red heaters. These heaters do not heat in the same manner as the alcohol and catalytic heaters. Where the other heaters actually heat the air, the infra-red directs heat waves through the air to heat the items or people toward which they are directed. For this reason, they are

TRUE FISH SMOKING— (Continued from page 36)

any large ash particles or debris coming from the firepot. To diffuse the smoke as it enters the chamber, an eight inch square tin plate placed on one-quarter by inch and one-half stove bolt legs, sets off the screen.

The wood skid on which the refrigerator sets is nothing more than a 2 x 4 frame with one-inch sheeting overlay. Three-quarter inch plywood could easily be substituted for the sheeting boards.

Not only on the skid but throughout the materials list, substitutions can be made when a better or more convenient material is available.

PREPARATION OF FISH

Construction of the smoker is, of course, important; but equally important is both the preparation of fish to be smoked and operation of the curing structure.

To prepare fish for smoking, cut off the head, and open the body cavity by cutting from the top along one side of the backbone. Clean the body cavity thoroughly, and wash the flesh well. Do not skin the fish.

Sanitation is very important during the cleaning process in order to prevent botulism, a type of food poisoning. Caused by a microorganism, this disease is serious, oftentimes fatal. It can only be prevented by prolonged boiling or cooking under pressure, both of which are impossible when smoking. Fortunately, the disease is very rare; and as long as strict sanitary cleaning procedures are followed, one need not worry about it.

Before smoking, fish should be buried in pickling salt for 10 to 12 hours or soaked in salt brine. One and one-half cups of salt per gallon of water is a heavy enough brine, if fish are soaked overnight. By making a heavier solution, say four cups of salt per gallon of water, the soaking time can be cut to an hour or two.

A real connoisseur of smoked fish might try soaking fish for two to four hours in the following concoction: Two and one-half pounds of salt, one pound sugar, two tablespoons saltpeter, two tablespoons crushed peppercorns and one ounce crushed bay leaves per gallon of water. Once fish are removed from the salt packing or brine, they should be washed thoroughly and allowed to dry before smoking.

SMOKING

Ash, oak, hickory, apple or cherry wood are best for smoking. Sapwood, such as pine, should not be used. The greener the wood, the better. The fire used in smoking should be a smoldering fire or smudge with a maximum of smoke and a minimum of heat.

Fish should be placed on the shelves of the smoker with scales skin side up. This enables juices to run off the fish onto the slanting shelves. Fish can either be cold-smoked or hot-smoked in the smoker. The series of dampers and interchangeable lengths of stove pipe allow the heat to be varied over a wide scale.

To cold-smoke fish, stoke the firepot and adjust dampers until the smoker's heat indicator reaches approximately 100 degrees F. Smoke fish at this level for eight hours. Then build up dense smoke while maintaining the same temperature and smoke fish for four more hours. Finally, raise the temperature to 130 degrees F., or 140 degrees F. and smoke the fish an additional two to four hours. If one is leary about eating fish prepared in this manner, cook them after they have been smoked or hot-smoke them instead.

To hot-smoke fish, follow the above procedure until the last smoking step. Instead of 130 degrees F. or 140 degrees F., stoke the fire until the temperature of at least 180 degrees F. to 200 degrees F. is reached. Two or three hours smoking at this temperature will cook the fish.

Many people, including Dixon, prefer to let smoked fish set for 24 hours before eating them. This is a matter of personal preference, however. They are delicious hot out of the smoker.

pointed, in use, toward the area in which you wish heat.

The flame, in this case, is usually contained in a ceramic or specially-made wire mantle. There is little danger of causing fire with this model as well as the others.

Your camping supply store can give you more specific details on these heaters, but if you wish to extend your camping season, then you should investigate. If you can rent one of these before buying, you can quickly determine which will suit your needs.

Any heater uses oxygen in its heating action, and for this reason, you should be careful to provide adequate ventilation when

using them. In a rigid-frame unit such as a house-trailer or pick-up camper, a window should be opened slightly. In a tent or tent-camp you might have enough air intake but to be on the safe side, zip open a door or window.

When buying a sleeping bag, make sure it has more "filler" at the bottom than on the top. A sufficient quantity of filler between you and the ground helps prevent heat loss.

A flashlight with a leather wrist strap can be hung on an inside tent pole to make a convenient night light.

FOUL WEATHER CAMPING

Max Schnepf

A successful camping trip too often depends on the weather. And although good weather can be predicted, there is nothing to do but grin and bear it if it turns bad. Fortunately, a camper can take a few precautions ahead of time to insure a more comfortable trip.

PERSONAL COMFORT

A wide variety of waterproofed fabrics, plastic and rubber rain gear is available to campers and outdoorsmen. Because of the wide variation in the degree of waterproofing, fabric wearing potential and fabric weight, the selection of foul weather gear must be based on the type of activity you are involved in, the season of the year, frequency of use, the abuse clothing must take and, to some extent, your pocketbook.

Only rubber and plastic rain suits offer complete protection during rain storms. Rubber suits usually wear well but are relatively heavy and expensive. They tend to trap body perspiration with the result that you feel as wet as if you weren't wearing rain gear at all.

Consequently, they are not recommended for wear during hot weather. Plastic, on the other hand, will not take the abuse that rubber will. It tears easily but is lighter, usually cheaper and more comfortable in warm weather.

Water repellent fabrics offer adequate protection in damp, drizzly weather for short periods of time. Exposure to heavy amounts of moisture, however, quickly minimize their effectiveness. Unfortunately, many of these fabrics are the most comfortable to wear.

Rain suits can usually be purchased in overall style or in pant-suit combinations. The latter is preferred by campers and outdoorsmen whose activity is strenuous. Overall styled suits will not absorb much abuse because of the inherent construction weaknesses in the penders.

A rain poncho, although clumsy to work in, is a suitable compromise between a full rain suit and a hat. If you decide to buy a poncho, make sure you get one that extends below the knees for maximum protection from rain. Use the criteria mentioned earlier to determine whether you buy one made of rubber, plastic or some other water repellent fabric.

If your rain suit or poncho does include a hood or rain hat, buy a rain hat with a wide brim to prevent water from running down your neck.

Vet, cold feet can make any trip miserable. The utmost care should be taken to select the proper footwear.

Leather boots are without a doubt the most comfortable style of footwear. They can not be kept permanently dry, however, no mat-

ter what anyone says. True, the new silicone waterproofing liquids and sprays can be used to treat leather boots periodically; but continued exposure to water will minimize the treatment's effectiveness.

Rubber pacs, although weatherproof, are less comfortable than leather boots and are recommended only for extremely cold, wet weather. These rubber boots do not "breathe." Sweaty feet result and ultimately contribute to cold feet. If you wear pacs, sweating feet can be counteracted to some extent by wearing absorbent cotton socks.

CAMP COMFORT

As important as keeping yourself dry is keeping your campsite and equipment dry. Following are a few hints that should make even foul weather camping somewhat comfortable.

Choose your campsite carefully. Avoid low areas, old stream beds and other areas that may flood with heavy precipitation. When you pitch your tent, leave the guy ropes slightly slack to allow for shrinkage. If this is not done, shrinkage could easily result in tearing of the tent canvas. Also use tent stakes at least one and one half to two feet long to prevent them from pulling loose in soggy ground. A hole around the tent pole can be covered with a can or tin foil to prevent water from running into the tent.

An extra canvas or plastic tarp can be used in several ways to waterproof your campsite. Place it under the tent floor for extra protection or in front of the tent for a foot mat. A third and very practical alternative is to construct a covered cooking area.

Keep sleeping bags and bedding fresh and dry. Air them daily, if possible. During a rainstorm, roll sleeping bags up and tie them tightly. Use plastic bags and waterproof cans for food. Plastic bags will also keep equipment, such as cameras, dry, but make sure the equipment is dry before putting it in a bag or case.

Your chances are good of encountering bad weather on a camping trip. Rather than having to reduce the effects of being wet, why not avoid them in the first place. Go equipped!

FISH "COOK-OUT"—

(Continued from page 37)

large kettle over a hot fire. Add tomatoes, potatoes, catsup, and seasonings. Cover and cook for 30 minutes, stirring occasionally. Add fish and continue cooking for 45 minutes or until potatoes are tender. Serves six.

Crispy Fried Fish

- 6 pan-dressed fish
- 12 slices bacon
- 1/4 cup evaporated milk
- 1 1/2 teaspoons salt
- Dash pepper
- 1/2 cup flour
- 1/4 cup cornmeal
- 1 teaspoon paprika
- 1/3 cup butter or other fat

LEWIS AND CLARK TRAIL—

(Continued from page 33)

Perhaps you can understand how Lake Manawa and the other ox-bow lakes along the route came to be formed by reading what Clark wrote in his diary shortly before the party reached the mouth of the Platte River. "... at the time were in a Situation (not to be bettered), near the upper point of the Sand Island, on which we lay, and the opposite Shore, the bank was falling in and lined with snags as far as we could see down ...". Until recent years, this was the normal condition of the river. Wing dams and stable water flow has put an end to the constant bank erosion that often resulted in sudden channel shifts.

Camp in Wild Surroundings

Plan your stay at Manawa so that you'll have time to get to your next campground—Wilson's Island, located a few miles southwest of Missouri Valley. Take Interstate 29 from Council Bluffs to its junction with Highway 30, turn left and drive west until you come to a county road marked by a State Conservation Commission sign. Turn left on this road and follow it directly to Wilson's Island.

This camping spot will give you a touch of the wilderness that greeted the Lewis and Clark party at every turn. Here the cottonwood and willow thickets grow more dense than any you've ever seen before. This woods is home to many kinds of wildlife, including Iowa's white-tailed deer. And though the thickets are nearly impenetrable, the picnic and camping areas are neat, spacious and well kept. Also, you'll have access to the Missouri and its abundant fishing opportunities. It's a rare camper that won't enjoy this spot!

About twenty miles to the north is another Missouri access area that will rival any spot you care to name. It's called Tyson's Bend, and is located about six miles west of Modale. You'll not be able to drive into this area because sand dunes block entry on the landside. You can drive to the parking area and camp there, however. If you're a "real" camper and use a tent, it's okay to pack it across the dunes and set up within the area.



Waubensie's Inspiration Point . . . yields a magnificent view of timbered loess hills and the flat Missouri River bottomlands.

The Expedition of Discovery was in this area in the early part of August, 1804, having just taken part in the famed "Council Bluff" meeting. Clark wrote the following entry on August fourth: "... here the high Land is Some Distance from the river on both Sides, and at this place the High lands are at least 12 or 15 miles a part, the range of high land on the S.S. [Nebraska] appear to contain some timber, that on the L. S. [Iowa] appear to be entirely clear of anything but

(Continued on page 40)

Lemon wedges

Clean, wash and dry fish. Fry bacon until crisp. Remove bacon, reserving bacon fat for frying. Combine milk, salt, and pepper. Combine flour, cornmeal, and paprika. Dip fish in milk mixture and roll in flour mixture. Place butter and bacon fat in a heavy iron frying pan. Place on a bar-

becue grill about four inches

from hot coals and heat until fat is hot but not smoking. Add fish and fry for five minutes. Turn carefully and fry for five minutes longer or until fish is brown and flakes easily when tested with a fork. Drain on absorbent paper. Serve with lemon wedges and bacon. Serves six.

LEWIS AND CLARK TRAIL—

(Continued from page 39)

what is common in an open Plain." Observant though he was, Clark was poor on spelling and punctuation.

An Historic Camp Ground

After you've fished to your heart's content at these two famous fishing spots, you'll be ready to push on to what could possibly be the high point of your trip. Take the county blacktop north from Modale to Mondamin. Here you pick up highway 75 which will take you to the Lewis and Clark State Park located west of Onawa. On this stretch you'll be driving along, through and around the remnants of the bed of the Missouri that was actually traversed by Lewis and Clark.

The park itself is situated on the west side of an ox-bow lake called Blue Lake. At its entrance is a monument marking the area as one of two camping spots in Monona County that was actually used by the Expedition of Discovery in August of 1804.

Two more river access areas north of Onawa offer both camping and fishing possibilities. These are Winnebago Bend west of Sloan, and Snyder's Bend west of Salix. Both have reputations of being fabulous fishing spots. As with all the river access areas that you might choose to visit, it is wise to stop and get specific directions at the near-by towns. You'll have to use unmarked county roads, and without clear instructions you might end up driving many extra miles.

When you leave Snyder's Bend, you've left the last camp ground located on the Missouri. But since you'll want to drive on to Sioux City and visit Sergeant Floyd Monument (Floyd was the only member of the party to die during the entire expedition), plan on camping a day or two at Stone Park.



Jack Kirstein.

Missouri River sandbars make excellent family camping and picnicking areas.

Camping facilities at this park are "at your pleasure." For those who desire all the comforts of home, a completely modern camp ground has been constructed. Those who have taken to the camp trail to "get away from it all" can set up in an area that has no more than a water spigot and toilet facilities. Make your wishes known when you check in at the registration cabin.

In many respects Stone Park is similar to Waubonsie. There are significant differences, however. For instance, there are about ten miles of bridle paths within the park. Horses may be rented from stables located just outside the park proper. There are approximately six miles of nature trails and seven and a half miles of roads.

You'll want to drive up to Dakota point and see the view from this magnificent bluff high above the Big Sioux River. From here you can look across the tip of South Dakota and see the Nebraska bluffs rising above the Missouri.

The Floyd Monument

Using the park as a base will enable you to spend extra time sight-seeing in the area. On your route to Stone Park (Interstate 29 and Iowa 12 take you right to the gate) you'll have passed beneath Floyd's

LANDS AND WATERS CONSERVATION OFFICER DIRECTORY STATE PARK OFFICERS

State Park	Officer	Address
A. A. Call	Melvin Trout	Route 1 Box 220, Algona 50511
Backbone	Floyd Sherry	Dundee 52038
Beeds Lake	Ed Myers	Hampton 50441
Bellevue	Myrtle Jones	R. 3, Bellevue 52031
Black Hawk	Robert Jack	Box 7, Lake View 51450
Clear Lake	Don Carrier	R. 1, Clear Lake 50428
Dolliver Memorial	Warren Strait	R. 1, Lehigh 50557
Fort Defiance	Wesley Jones	R. 2, Estherville 51334
Geode	Henry Savage	R. 1, Danville 50613
George Wyth Memorial	Dale Brumm	Box 252, Cedar Falls 50613
Green Valley	John Ripberger	R. 1, Creston 50801
Gull Point	Park Officer	R. 2, Milford 51351
	(vacancy)	
Lacey-Keosauqua	Albert Gandy	Box 398, Keosauqua 52565
Lake Ahquabi	Caryl Carstens	R. 1, Indianola
Lake Darling	William Wyatt	R. 1, Brighton 52540
Lake Keomah	Harry Hunter	R. 1, Oskaloosa
Lake MacBride	Charles Hagen	R. 2, Solon 52333
	Davis Lange (trainee)	
Lake Manawa	Jim McEldeen	Manawa 107, Council Bluffs 51502
Lake of Three Fires	Joe Murphy	R. 1, Bedford 50833
Lake Wapello	Harold Knoop	R. 1, Drakesville 52552
Ledges	Wayne Partridge	R. 1, Madrid 50036
Nine Eagles	Howard Coon	R. 1, Davis City 50065
Palisades-Kepler	Donald Cole	R. 2, Mt. Vernon 52314
Pammel	Herman Ripberger	R. 3, Winterset 50273
Pikes Peak	Lynn Johnson	116 Center St., Box 54, McGregor 52157
Pilot Knob	Vern Haufler	R. 1, Box 108, Forest City 50436
Pine Lake	Gene Bloudek	R. 2, Box 273, Eldora 50627
Prairie Rose Lake	Gene Carrier	R. 4, Harlan 51537
Red Haw Lake	Milan Aschbrenner	R. 1, Chariton 50049
Rock Creek	Myron Brewer	R. 2, Kellogg 50135
Springbrook	David Jack	Box 72, R. 3, Guthrie Center
Stone	Henry Anderson	R. 3, Sioux City 51103
Union Grove	Craig Kaiser	Gladbrook 50635
Viking Lake	Raymond Turner	R. 2, Stanton
Walnut Woods	Carl Burk	R. 1, West Des Moines
Wapsipinicon	Robert Glenn	Anamosa 52205
Waubonsie	Kenneth Formanek	R. 2, Hamburg 51640
Wild Cat Den	Gary Silver	R. 3, Muscatine 52761

WATER SAFETY PATROL STATIONS

Station	Address	Telephone
Clear Lake	c/o Fish Hatchery	515 FL 7-4805
Gulf Point & Lake Okoboji	Milford, Iowa	712 337-3377
	(Wahpeton, Iowa (phone)	
Triboji Service Station	Tribune Beach, Iowa	712 336-3595
Spirit Lake	Orleans, Iowa	712 336-1577
Storm Lake	Storm Lake, Iowa	712 RE 2-4491
Black Hawk Lake	Lake View, Iowa	712 3163
Lake MacBride	Box 336, Solon, Iowa	319 644-3615
Missouri River	Earling, Iowa	712 1092
Mississippi River	Guttenburg, Iowa	319 1631

Monument. The 100 foot shaft marks the third burial of Floyd's remains.

The Missouri in its many rampages ate away huge chunks of bluff and by 1857 his casket was exposed. Before they were rescued, some of the bones had been forever lost to the fury of the river. May 8, 1857, what was left was placed in a solid walnut coffin and re-interred.

In 1895 the Floyd Memorial Association was formed. Members consisted of men and women from all over the U. S. On August 1, the 91st anniversary of Floyd's death, what was left of his body was placed in two earthen jars and buried for the final time. The group raised nearly \$20,000, and under the direction of the U. S. Engineer, the Egyptian obelisk was raised over the grave.

The shaft is about 200 yards from where the grave was originally located. This means that when you drive past the monument it's quite possible that you are below the spot that once served as a site of the grave.

When you pause to pay your respect to this fallen frontier warrior, you may also want to reflect that the "pretty little river" (Lewis phrase) named for Floyd by Lewis, has been completely channelized. No doubt that if Lewis and Clark were to pass this way today they would note the alteration of the Floyd River as one of the great changes to have occurred along their route.

Located near the interchange of Iowa 12 and Interstate 29 is the grave of War Eagle. Even the Lewis and Clark Expedition stopped at this grave to do a little sight-seeing. They had heard the tales of how this crafty chieftain had earned the terrible reputation as a user of arsenic against all who opposed him. It is said that War Eagle was placed in a sitting position on his favorite horse and buried looking out across the broad river that he'd terrorized for so many years.

This, then, is what awaits the traveler who chooses to camp along the Lewis and Clark trail. It is a trip that can't be "done" in a day, even a weekend. Instead, it's a vacation trip along the edge of where the West begins.